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09/774,571	02/01/2001	Luc Attimont	Q62915	2504

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EXAMINER

MACE, BRAD THOMAS

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/774,571

Applicant(s)

ATTIMONT ET AL.

Examiner

Brad T. Mace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The first paragraph of the specification should be preceded by the title header: "FIELD OF INVENTION". It is unclear as to what is meant by "data to means" on line 12 of pg. 7. "clear" should be "tear" on line 16 of pg. 7. "as shown in FIG. 2" should be added after "IP" on line 3 of pg. 8. There should be a period after "art" on line 26 of pg. 11. Appropriate correction is required.

Drawings

2. The drawings are objected to because all of the components (references) should be labeled in Figure 1. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 3, and 7 are objected to because of the following informalities: there is no transitional phrase such as "comprising" in claim 1 and in claim 7. The word "the" should be removed on line 5 of claim 1. The word "the" should be removed on line 5 of claim 3. "signals" on line 11 of claim 7 lacks antecedent basis. "after they are converted into the form of packets and before they are sent" on lines 12-13 of claim 7 should be replaced with "before they are converted into the form of packets to be sent". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claims 1-7, the phrase "for example" (i.e.) on line 21 of claim 1 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. Since claim 7 encompasses "the coding method according to claim 1", then it is also rejected under 35 U.S.C. 112 2nd. See MPEP § 2173.05(d).

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6. Claims 1-6 are rejected as vague and indefinite since there is no positively recited method steps in the claims for defining an actual process for the method. Proper recitation for a method claim shall list a series of method steps in clear and concise language. See *Ex parte Erlich*, 3 USPQ 2d 1011 at 1017[6]. In addition, claims 1-6 contain numerous unclear recitations apparently resulting from translation. The intended limitations of these claims therefore cannot be distinguished with accuracy. For example, in claim 1, lines 16-18, it is not clear what is meant by "eliminating any packets transmitted twice and using a dissimulation algorithm for signal segments corresponding to missing packets." It is noted that no packets was previously recited as being transmitted twice or lost, and the meaning of "dissimulation algorithm" is not clear from the specification. Claim 7 is an apparatus claim, but it has similar ambiguities. Applicant is advised to carefully review all claims for full compliance with 35 U.S.C. 112 second paragraph.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,315,591 (Brent et al.) in view of U.S. Patent No. 6,466,574 (Fujisaki et al.).

Regarding claim 1:

9. Brent et al. discloses a coding method to facilitate the reproduction as sound of digitized speech signals (col. 2, lines 60-66, where only voice signals are encoded, thus to be reproduced as sound) transmitted to a user in a telecommunications system (see Figure 1, reference two is a terminal/user) during a call between the user terminals (see Figure 1, reference 2) via a packet transmission network (and VoIP is known to be established over a packet transmission network), in particular the Internet (see Figure 1, where Figure 1 is a packet switching network, and comprises a plurality of interconnected packet switching nodes, reference 1), the speech signals picked up by a terminal (see Figure 2, where reference 4 is the input voice samples) being coded digitally in accordance with a coding protocol (col. 2, lines 49-52, CCITT recommendation G.727) which divides them temporally into a succession of segments (blocks, col. 2, lines 49-55) of the same duration (col. 2, lines 56-60, sample bit rate before is 40 kbps and 5 bit samples are taken over an interval of 16 milliseconds and produce 5 blocks of 128 bits each) before converting them segment (block) by segment (block) into the form of packets (see Figure 2, packet assembler, and col. 2, lines 67-68 through col. 3, lines 1-4) which are transmitted via the transmission network (see Figure 1, packet transmission network) to a destination terminal (see Figure 1, reference 2 at the right hand side of the figure) in which the packets are decoded using a decoding protocol complementary to the coding protocol to enable reproduction of the speech signals from reproduced signal segments (blocks) (since the destination terminal (reference 2 of the right hand side of Figure 1) is the recipient of the coded voice transmission from the first terminal (reference 2 of the left hand side of Figure 1), then it

is able to reproduce the speech signal based on the reverse of the process taught above by Brent et al.), wherein segments (blocks) of a succession being coded for transmission in the form of packets are analyzed to determine whether any segment (block) is critical, therefore likely not to be replaced effectively by a dissimulation algorithm in the destination terminal if the corresponding packet is missing (col. 2, lines 46-67 through col. 3, lines 1-28, where core blocks contain the most significant bits (critical) and the remaining blocks being designated enhancement blocks, thus if a packet containing core block information is lost, it is not likely replaced effectively by a dissimulation algorithm in the destination terminal (the use of G.727 to put back together the speech signal in the destination terminal)) and/or whether it is to be considered replaceable by a dissimulation algorithm in the destination terminal under the same conditions (since the packets containing core blocks contain critical information, they are not replaceable and since the packets containing enhancement blocks can be dropped, they can be considered replaceable (with nothing) since the speech signal can be reproduced (with G.727) even with the missing packets corresponding to the enhancement blocks). However, Brent et al. does not disclose expressly eliminating any packets transmitted twice.

Fujisaki et al. discloses eliminating any packets transmitted twice (col. 7, lines 60-66).

A person of ordinary skill in the art would have been motivated to employ Fujisaki et al. in Brent et al. in order to obtain a method for speech signal coding (decoding) that eliminates any packets transmitted twice so as to avoid redundant information. At the

time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Fujisaki et al. with Brent et al. (collectively Brent et al.-Fujisaki et al.) to obtain the invention as specified in claim 1. The suggestion/motivation to do so would have been to avoid unnecessary processing of packets (information) that has already been accounted for.

Regarding claim 2:

10. Brent et al. discloses substantially all the claimed modified invention as specified in claim 1, however, does not disclose expressly that the packets are duplicated for each critical segment in order to enable the sending terminal to transmit critical segments twice.

Fujisaki et al. further discloses that packets are replicated (col. 5 lines 42-44).

A person of ordinary skill in the art would have been motivated to employ Fujisaki et al. in Brent et al. in order to obtain a method that not only detects the critical segments (core blocks), but also duplicates these critical segments (core blocks). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Fujisaki et al. with Brent et al. (collectively Brent et al.-Fujisaki et al.) to obtain the invention as specified in claims 1 and 2. The suggestion motivation to do so would have been to obtain a more robust method in coding and transmitting a speech signal by not only detecting the critical segments (core blocks), but also to duplicate these core blocks to greatly enhance the probability of reception of each of these segments (blocks), thus improving the reliability of the speech signal to the destination terminal.

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Regarding claim 3:

11. Brent et al. discloses substantially all the claimed modified invention as specified in claim 1. Brent et al. further discloses that replaceable packets (packets containing enhancement block information) are suppressed in the event of congestion in the network (col. 3, lines 10-12). However, Brent et al. does not disclose expressly wherein replaceable packets are suppressed in the sending terminal in a succession of packets relating to transmitted speech signal segments in order to control the packet transmission bandwidth.

Fujisaki et al. further discloses increasing routing redundancy without increasing the total packet transmission volume in the network to the degree of the route redundancy (col. 8, lines 45-48).

A person of ordinary skill in the art would have been motivated to employ Fujisaki et al. in Brent et al. in order to control the packet transmission bandwidth (total packet transmission volume) so that excessive bandwidth is not used. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Fujisaki et al. in Brent et al. (Brent et al.-Fujisaki et al.) to obtain the invention as specified in claims 1 and 3. The suggestion/motivation do so would have been to control the packet transmission bandwidth (total packet transmission volume) so that bandwidth usage remains efficient.

Regarding claim 4:

12. Brent et al. discloses substantially all the claimed modified invention as specified in claim 3. Brent et al. further discloses suppressing replaceable packets (packets

containing enhancement block information in the event of congestion (col. 3, lines 10-12). However, Brent et al. does not disclose expressly substituting packets resulting from duplication for replaceable packets prior to transmission.

Fujisaki et al. further discloses that the sending terminal maintains a constant transmit output bandwidth in the event of duplication of critical packets (packets containing core block information) for double transmission (col. 8, lines 45-48, increasing routing redundancy without increasing the total packet transmission volume in the network to the degree of the route redundancy).

A person of ordinary skill in the art would have been motivated to employ Fujisaki et al. in Brent et al. in order to control the transmit output bandwidth by replacing the suppressed packets with critical packets. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Fujisaki et al. with Brent et al. (collectively Brent et al.-Fujisaki et al.) in order to obtain the invention as specified in claims 1, 3, and 4. The suggestion/motivation to do so would have been to maintain constant transmit output bandwidth so that critical information can be passed from the source to the destination more quickly without utilizing any extra bandwidth.

Regarding claim 7:

13. Brent et al. discloses telecommunications equipment (such as a user terminal, see Figure 2) provided with coding means (see reference 3, Figure 2) adapted to be connected to a packet exchange network (see Figure 1, where reference 2 is part of (connected to) the packet exchange network, and VoIP is known to be established over

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a packet transmission network) and to communicate via the network with compatible equipment by means of packets of digitized sound signals (such as speech (voice) signals) (col. 2, lines 46-49), the equipment having hardware means for digitally coding sound (speech/voice) signals (see reference 3, Figure 2) that it must send in accordance with a particular protocol (col. 2, lines 49-52, CCITT recommendation G.727) which temporally divides the signals into a succession of segments (blocks, col. 2, lines 49-55) of the same duration (col. 2, lines 56-60, sample bit rate before is 40 kbps and 5 bit samples are taken over an interval of 16 milliseconds and produce 5 blocks of 128 bits each) before they are converted into the form of packets and before they are sent (col. 2, lines 44-68 through col. 3, lines 1-34, blocks are created, followed by packet creation from the blocks, and this occurs before packets are transmitted) and for reproducing as sound segments (blocks) of digitized sound signals (since the destination terminal (reference 2 of the right hand side of Figure 1) is the recipient of the coded voice transmission from the first terminal (reference 2 of the left hand side of Figure 1), then it is able to reproduce the speech signal based on the reverse of the process taught above by Brent et al.) which are sent to it in the form of packets (col. 3, lines 29-34, packets are transmitted through the network to the destination terminal, reference 2 on the right hand side of Figure 1) and a dissimulation algorithm for signal segments (blocks) corresponding to any missing packets in a succession of received packets (col. 2, lines 46-67 through col. 3, lines 1-28, where core blocks contain the most significant bits (critical) and the remaining blocks being designated enhancement blocks, thus if a packet containing core block information is lost, it is not likely replaced

effectively by a dissimulation algorithm in the destination terminal (the use of G.727 to put back together the speech signal in the destination terminal) and/or whether it is to be considered replaceable by a dissimulation algorithm in the destination terminal under the same conditions (since the packets containing core blocks contain critical information, they are not replaceable and since the packets containing enhancement blocks can be dropped, they can be considered replaceable (with nothing) since the speech signal can be reproduced (with G.727) even with the missing packets corresponding to the enhancement blocks), thus a dissimulation algorithm corresponding to the reproduction of the voice/speech signal in the presence of missing packets). However, Brent et al. does not disclose expressly eliminating any packets transmitted twice.

Fujisaki et al. discloses eliminating any packets transmitted twice (col. 7, lines 60-66).

A person of ordinary skill in the art would have been motivated to employ Fujisaki et al. in Brent et al. in order to perform speech signal coding (decoding) that eliminates any packets transmitted twice so as to avoid redundant information. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Fujisaki et al. with Brent et al. (collectively Brent et al.-Fujisaki et al.) to obtain the invention as specified in claim 7. The suggestion/motivation to do so would have been to avoid unnecessary processing of packets (information) that has already been accounted for. (The modified invention as specified above in claim 7 having equipment means for implementing the coding

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method according to claim 1. See the modified invention (Brent et al.-Fujisaki et al.) in claim 1 above).

14. Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,315,591 (Brent et al.) in view of U.S. Patent No. 6,466,574 (Fujisaki et al.) as applied to claim 2 above, and further in view of U.S. Patent No. 6,678,267 (Anandakumar et al.).

Regarding claim 5:

15. Brent et al.-Fujisaki et al. discloses substantially all the claimed modified invention, however, does not disclose expressly wherein any critical packet which corresponds to a signal segment having an estimated error value relative to at least the immediately preceding segment which is great than an estimated error threshold value is duplicated and the error values are determined from predefined characteristics taken into account for the signal segments when they are coded.

Anandakumar et al. discloses packets having a QoS (col. 14, lines 5-7, having an estimated error value in terms of packet loss) relative to other packets having a QoS (col. 14, lines 7-9, pertaining to diversity), which is greater than a threshold requirement (col. 14, lines 6-7, estimated error value in terms of packet loss) and these packets are duplicated (col. 14, lines 7-8, indicated by increase/introduce diversity) and the packet loss rate (error values) are determined from predefined characteristics taken into account for the signal segments (packets) when they are coded (knowing the packet loss rate for particular QoS flows can be determined from predefined characteristics taken into account for the signal segments (or packets)).

A person of ordinary skill in the art would have been motivated to employ Anandakumer et al. in Brent et al.-Fujisaki et al. in order to duplicate packets that do not meet a certain threshold level (QoS threshold corresponding to data loss – error threshold). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Anadakumar et al. in Brent et al.-Fujisaki et al. (collectively Brent et al.-Fujisaki et al.-Anadakumar et al.) to obtain the invention as specified in claims 1, 2, and 5. The suggestion/motivation to do so would have been to duplicate critical (or important) packets subject to loss from the sending terminal to the destination terminal so as to increase the probability of reception of the critical (or important) packets.

Regarding claim 6:

16. Brent et al.-Fujisaki et al. discloses substantially all the claimed modified invention, however, does not disclose expressly that an indication of the rate of loss of packets provided by the destination terminal is taken into account in the process of choosing packets to be duplicated in a sending terminal.

Anandakumar et al. discloses an indication of the rate of loss of packets (col. 8, lines 66-67 through col. 9, lines 1-12, where packet loss is ameliorated) thus taken into account in the process of choosing packets to be duplicated (col. 9, lines 47-62, where redundancy of packets are directed to a number of diverse paths).

A person of ordinary skill in the art would have been motivated to employ Anadakumar et al. in Brent et al.-Fujisaki et al. in order to compensate for the rate of packet loss from the sending terminal to the destination terminal by duplicating certain

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packets that are of higher importance. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Anadakumar et al. in Brent et al.-Fujisaki et al. (collectively Brent et al.-Fujisaki et al.-Anadakumar et al.) to obtain the invention as specified in claims 1, 2, and 6. The suggestion/motivation to do so would have been to reduce the rate of loss of packets by duplicating certain packets that are of higher importance as to increase the probability of successful transmission.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Williams et al. discloses a method and apparatus for increased quality of voice transmission over the internet

*Hoffbeck et al. discloses a method and apparatus for improving the quality of speech signals transmitted over wireless communication facilities

*Partalo discloses a system for lost packet recovery in voice over internet protocol based on time domain interpolation

*McGowan discloses a lost-packet replacement for a digital voice signal

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad T. Mace whose telephone number is (703)-306-5454. The examiner can normally be reached on M-F, with the exception of every other Friday.

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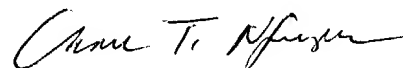
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703)-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

btm

Brad T. Mace
Examiner
Art Unit 2663

btm
August 5, 2004



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SUPERVISORY PATENT EXAMINER
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